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10/591,709	09/06/2006	Jun Cheng	L9289.06188	3134

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EXAMINER	
GUARINO, RAHEL	

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2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,709	CHENG ET AL.	
	Examiner	Art Unit	
	RAHEL GUARINO	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-9* is/are allowed.

6)☒ Claim(s) *1 and 10-12* is/are rejected.

7)☒ Claim(s) *2-5,13-16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to communication filed on 4/28/2010.

Claims 1,10 have been amended; new Claims 12-16 have been added and are pending in this application.

Response to Arguments

Applicant arguments

a) with regard to item (2) above, the Office Action proposes that Li discloses converting a reception quality comparison result to a three-bit field that may be used for SINR indexing (see Office Action page 3, lines 8, 10, and 1 l). However, Li's disclosure of converting a comparison result to a three-bit field is not the same as the Applicants' claimed subject matter of comparing the measurement result of the measurement step on each subcarrier of the multicarrier signal with a predetermined threshold value. Li does not disclose generating a plurality of reception quality data that have different formats and that are expressed by bits, as recited in Applicants' claim 1.

b) With regard to item (3) above, the Office Action proposes that Li discloses selecting a cluster of subcarriers whose reception quality comparison result has a value

less than 1 dB (see Office Action page 3, line 14, and Li [0076]). However, Li does not disclose representing a single reception quality comparison result with multiple data formats; thus, it necessarily follows that Li cannot disclose the Applicants' claimed subject matter of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data.

Examiner's response

a) Li discloses a generation step of comparing the measurement result on the subcarrier of the measurement step with a predetermined threshold value *(signal comparison made during traffic period with predefined threshold; para#70)* then performing format conversion on the comparison result using of different references to generate a plurality of reception quality data *((SINR (1-N);fig.5)* that have different references expressed by bits *(converting to 3-bit field used for SINR indexing and furthermore, fig. 5 shows different cluster ID with its associated SINR, which are identified by the 3-bit; para#78).*

a) the independent claims cite "a **measurement step** of measuring reception quality of the multicarrier signal on a **subcarrier basis**", a generation step of **comparing the measurement** result on **each subcarrier** of the multicarrier signal with

a predetermined threshold value, performing format conversion **on the comparison result** using of different references to generate a **plurality of reception quality** that have **different formats".**

Therefore, the claims disclose more that one reception quality comparison result with multiple data formats.

2. Applicant's arguments have been fully considered but they are not persuasive.

Applicant arguments

a) Regarding the obviousness rejection applied to claim 1, Puig-Oses also does not disclose the above-mentioned items (2) and (3) of claim 1. The Office Action proposes, with respect to item (2), that Puig-Oses discloses determining an appropriate transmission format based on a decoded C/I value (see Office Action page 6, lines 3-5), However, Puig-Oses disclosure of determining an appropriate transmission format based on a reception quality value is not the same as the claimed subject matter of "performing format conversion on the comparison result using a plurality of different references to generate a plurality of reception quality data that have different formats and that are expressed by bits" and "selecting reception quality data with a smallest data amount from the plurality of generated reception quality data," as recited in Applicants' claim 1.

b) Although the Office Action proposes, with respect to the above-mentioned

item (3) of claim 1, that Puig-Oses discloses reducing the transmission rate of a channel if the channel experiences poor reception quality (see Office Action page 6, lines 8-l 2), Applicants submit that such disclosure is not similar to the claimed subject matter performing format conversion on the comparison result using a plurality of different references to generate a plurality of reception quality data that have different formats and that are expressed by bits and "selecting reception quality data with a smallest data amount from the plurality of generated reception quality data.

Examiner's response

a) Puig-Oses discloses using the comparison result to perform format conversion *(determines the appropriate transmission formats (converting to 5-bit CQI) according to the decoded C/I value)* using of different references to generate a plurality of reception quality data that have different references formats *(rates)* and that expressed by bits (*C/I value are expressed in bits);*a selection step of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data and a transmission step *(316)* of transmitting the selected reception quality data *(the channel condition triggers the transmission over the transmission subsystem (316) of the base station at a reduce rate. for example, if the remote station is traveling at high velocity (unfavorable channel condition), the transmission on the CQI channel will be selected at a reduce rate;para#47).*

b) Puig-Oses discloses using the comparison result to perform format conversion *(determines the appropriate transmission formats (converting to 5-bit CQI) according to the decoded C/I value)* using of different references to generate a plurality of reception quality data that have different references formats *(rates)* and that expressed by bits (*C/I value are expressed in bits)*;a selection step of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data and a transmission step *(316)* of transmitting the selected reception quality data *(the channel condition triggers the transmission over the transmission subsystem (316) of the base station at a reduce rate. for example, if the remote station is traveling at high velocity (unfavorable channel condition), the transmission on the CQI channel will be selected at a reduce rate;para#47)*. By transmitting at a reduce rate, the C/A value is reduced small bit value *(small amount).*

Furthermore, Applicants are remained that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claim. The Examiner is not limited to Applicant's definition.

3. Applicant's arguments have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. US 2002/0119781

Re claim 1, Li discloses a reception quality notifying method *(fig.13;a scheduler (1301))* comprising:

a reception step of receiving a multicarrier signal *(receiving OFDM multicarrier signal;para#7);* a measurement step of measuring reception quality of the multicarrier signal on a subcarrier basis *(each subcarrier measures SINR of each subcarrier and reports back to base station; para#41);*a generation step of comparing the measurement result of the multicarrier signal on each subcarrier of the multicarrier signal with a predetermined threshold value *(signal comparison made during traffic period; para#70 and 7)* and performing format conversion on the comparison result using of different references to generate a plurality of reception quality data that have different references expressed by bits *(converting to3-bit field used for SINR indexing and furthermore, fig. 5 shows different cluster ID with its associated SINR; the para#78)*; a selection step of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data *(selection process based on SINR and power difference, smaller that 1dB; para#77)* and a transmission step of transmitting the selected reception quality data *(transmission of information stored in the buffer (para#83).*

Re claim 10, Li discloses a reception quality notifying apparatus *(fig.13;a scheduler (1301))* comprising:

a receiver *(1305;transceiver)* that receiving a downlink multicarrier signal *(receiving OFDM multicarrier signal;para#7);* a measurer that measures reception quality of the multicarrier signal on a subcarrier basis *(each subscarrier measures SINR of each subcarrier and reports back to base station; para#41);*a generator *(power calculation processing block (403))* that compares the measurement result of the measurer on each subcarrier of the multicarrier signal with a predetermined threshold value *(signal comparison made during traffic period; para#70 and 7)* and performing format conversion on the comparison result using of different references to generate a plurality of reception quality data that have different references expressed by bits *(converting to3-bit field used for SINR indexing and furthermore, fig. 5 shows different cluster ID with its associated SINR; the para#78)*; a selector *(cluster ordering and selection;405)* that selects reception quality data with a smallest data amount from the plurality of generated reception quality data *(selection process based on SINR and power difference, smaller that 1dB; para#77);* a transmitter *(1305; transceiver)* that transmits the selected reception quality data *(transmission of information stored in the buffer (para#83).*

Re claim 11, the base station claim 10 comprising (fig.13):

a transmitter *(1305; transceiver)* that transmits downlink multicarrier signals to the plurality of radio communication terminal apparatuses *(para#78)* ; a receiver *(1305; transceiver*) that receives uplink multicarrier signals including reception quality data

indicating reception quality of the downlink multicarrier signals transmitted from the plurality of radio communication terminal apparatuses *(para#40);* a determiner *(scheduler and allocator' 1301)* that determines formats of the reception quality data included in the uplink multicarrier signals for each of the plurality of radio communication terminal apparatuses *(para#81);* and an assignment determiner *(scheduler and allocator; 1301)* that determines respective subcarriers to be assigned to the plurality of radio communication terminal apparatuses in accordance with the determined formats *(para#81).*

Re claim 12, Li discloses a reception quality notifying method *(fig.13;a scheduler (1301))* in a radio communication terminal apparatus, comprising:

a reception step of receiving a downlink multicarrier *(OFDM multicarrier signal;para#27);* a measurement step of measuring reception quality of the multicarrier signal on a subcarrier basis to generate measurement result *(each subcarrier measures SINR of each subcarrier and reports back to base station; para#41);*a generation step of comparing the measurement result on each subcarrier with a predetermined threshold value *(signal comparison made during traffic period; para#70 and 7)* using of different references to generate a plurality of reception quality data that have different references expressed by bits and expressed in bits*(converting to3-bit field used for SINR indexing and furthermore, fig. 5 shows different cluster ID with its associated SINR; the para#78)*; a selection step of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data *(selection process based on SINR and power difference, smaller that 1dB; para#77)* and a transmission step of transmitting the

selected reception quality data *(transmission of information stored in the buffer (para#83).*

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim **1 is r**ejected under 35 U.S.C. 103(a) as being unpatentable over Puig-Oses et al. US 2007/0287487

Re claim 1, Puig-Oses discloses a reception quality notifying method *(314; scheduler)* comprising:

a reception *(312)* step of receiving a signal *(para#43, reception section received the transmitted information signal);* a measurement step of measuring reception quality of the multicarrier signal on a subcarrier basis (*para#38, the quality are measured of the forward link and transmitted in the open loop, channel varying condition on the subchannel basis fig.2. The quality are measured in term of C/I ratio);*a generation step of comparing the measurement result on the subcarrier of the measurement step with a predetermined threshold value (*para#45; the measured channel quality is compared with a predetermined threshold amount)* and performing format conversion on the comparison result using of different references to generate a plurality of reception

quality data that have different references formats and that expressed by bits (*para#43, the scheduler determines the appropriate transmission formats according to the decoded C/I value, where the C/I value are expressed in bits according to fig.4 channel elements);* a selection step of selecting reception quality data with a smallest data amount from the plurality of generated reception quality data and a transmission step *(316)* of transmitting the selected reception quality data *(the channel condition triggers the transmission over the transmission subsystem (316) of the base station at a reduce rate. for example, if the remote station is traveling at high velocity (unfavorable channel condition), the transmission on the CQI channel will be selected at a reduce rate;para#47).*

Puig-Oses does not explicitly disclose a multicarrier signal.

Instead, Puig-Oses discloses a WCDMA signal (para#9). Furthermore, it is well known in the art that WCDMA signal is a multicarrier signal *(see Copeland (US 2004/0052314) in para#15 and Reynolds et al. (US 2004/0045030)) in para#132 and background of* Puig-Oses in para#5*)*

Therefore, it would have been rendered obvious to one skilled in the art to utilize A WCDMA signal for the benefit of providing highly efficient and robust cellular telephone service (para#5, Puig-Oses).

Allowable Subject Matter

8. **Claims 6-9** are allowed.

9. Claims 2-5,13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is (571)270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rahel Guarino/
Examiner, Art Unit 2611

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611